Patent Claims

1. A MOSFET circuit having reduced output voltage
oscillations during a switch-off operation during which the
5   current flowing through the circuit falls to zero,
comprising:

- a first MOS transistor (T1) having a first number of cells,

10   - a second MOS transistor (T2) having a second number of
     cells, the second number being less than the first number
     and the second MOS transistor (T2) being provided with its
     source-drain path in parallel with the source-drain path of
     the first MOS transistor (T1) between a voltage source (+U)
15   and reference-ground potential, and

- a constant voltage element (Z1) between gate of the first
     MOS transistor (T1) and gate of the second MOS transistor
     (T2).
20
2. The MOSFET circuit as claimed in claim 1,
wherein
the constant voltage element is a zener diode (Z1).

25   3. The MOSFET circuit as claimed in claim 1 or 2,
wherein
a first resistor (R2) is provided in parallel with the
constant voltage element (Z1).

30   4. The MOSFET circuit as claimed in claim 3,
wherein
a second resistor (R1) is provided in series with the
parallel circuit formed by the constant voltage element (Z1)
and the first resistor (R2).
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5. The MOSFET circuit as claimed in claim 2,

wherein
the zener diode (Z1) and the first resistor (R2) are
integrated with one another.

5   6. The MOSFET circuit as claimed in claim 5,
wherein
the zener diode (Z1) and the first resistor (R2) are formed
by a highly doped polycrystalline layer (14) of the first
conduction type and a polycrystalline layer (13) of the
10   second conduction type that is in contact with the latter.

7. The MOSFET circuit as claimed in claim 6,
wherein
the polycrystalline layer (13) of the second conduction type
15   is located on the polysilicon gate plane of the MOSFET
circuit.

8. The MOSFET circuit as claimed in one of claims 1 to 7,
wherein
20   the first and second MOS transistors (T1, T2) are integrated
in a semiconductor body (1, 2).

9. The MOSFET circuit as claimed in claim 6 or 7,
wherein
25   the doping concentration of the highly doped layer (14) is
less than 10^{19} charge carriers cm^{-3}.

10. The MOSFET circuit as claimed in one of claims 1 to 9,
wherein
30   the MOS transistors (T1, T2) are compensation components.

11. The MOSFET circuit as claimed in claim 10,
wherein
floating or nonfloating compensation regions (16) of the
35   first conduction type are incorporated into a semiconductor
body (3) of the second conduction type.

12. An integrated MOSFET circuit having reduced output
voltage oscillations during a switch-off operation during
which the current flowing through the circuit falls to zero,
5   comprising:
   - a first MOS transistor (T1) having a first number of cells,
      said transistor being integrated in a semiconductor body
      (1),
   - a second MOS transistor (T2) having a second number of
10   cells, said transistor being integrated in the
      semiconductor body (1), the second number being less than
      the first number and the second MOS transistor (T2) being
      provided with its source-drain path in parallel with the
      source-drain path of the first MOS transistor (T1) between
15   a voltage source (+U) and reference-ground potential, and
   - a constant voltage element (Z1) between the gate of the
      first MOS transistor (T1) and gate of the second MOS
      transistor (T2), said constant voltage element being formed
      as a zener diode,
20   wherein
   the zener diode (Z1) is formed by a polycrystalline layer
      (13) on a polycrystalline gate plane of the MOS transistors
      (T1, T2) and a zone 14 provided in the polycrystalline
      layer (13) and having an opposite conduction type to the
25   conduction type of the layer (13).

13. The integrated MOSFET circuit as claimed in claim 12,
wherein
a resistor (R2) located in parallel with the zener diode (Z1)
30   is formed by the pn junction between the polycrystalline
layer (13) and the zone (14).

14. The integrated MOSFET circuit as claimed in claims 12 and
13,
35   wherein

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the doping concentration of the zone (14) is less than 10^{19} charge carriers cm^{-3}.